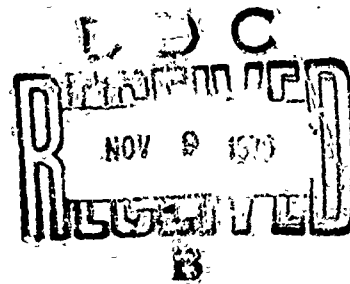


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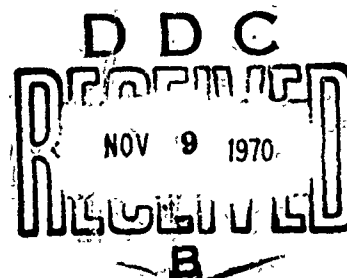
Research By-Product

**CRITICAL COMBAT PERFORMANCES,
KNOWLEDGES, AND SKILLS REQUIRED OF THE
INFANTRY RIFLE SQUAD LEADER**

Technique of Fire of the Rifle Squad

by Henry E. Kelly

October 1969



Technical Advisory Service

This document does not represent official opinion or policy
of the Department of the Army.

HumRRO Division No. 4
Fort Benning, Georgia

FOREWORD

In response to a request from the United States Army Infantry School (USAIS), HumRRO Division No. 4 initiated a Technical Advisory Service research project to identify and record the critical combat performances, knowledges, and skills required of the Infantry Rifle Squad Leader (IRSL) and the Infantry Fire Team Leader (IFTL).

The requirements imposed upon the IRSL and IFTL are essentially the same, except that the former is responsible for the control of the men and fires of both fire teams in a rifle squad, rather than only one. The senior IFTL within each squad must be prepared to assume effective leadership of the squad immediately if the IRSL becomes a casualty, completes a prescribed combat tour, or is absent for any reason. Since it is common practice to provide the same training for candidates for both positions of leadership and to employ the outstanding candidates in the higher position, each paper in this series will set forth the critical requirements imposed upon the IRSL and, therein, those imposed upon the IFTL as well.

Under Work Unit LEAD, Work Sub-Unit I, the critical combat performances, knowledges, and skills of the Infantry Rifle Platoon Leader were published in a series of 41 papers covering a like number of subject areas. Each paper was published with prior review and concurrence by the USAIS Instructional Departments concerned. These papers are being used as the primary source of data in completing a parallel series of papers for the Infantry Rifle Squad Leader and the Infantry Fire Team Leader. This document details the requirements in the area of Technique of Fire of the Rifle Squad.

This Technical Advisory Service research is being performed at HumRRO Division No. 4, Fort Benning, Georgia. The present Director is Dr. T. O. Jacobs.

Military support for the study is being provided by the U.S. Army Infantry Human Research Unit, Fort Benning, Georgia. LTC Chester I. Christie, Jr. is the present Unit Chief.

HumRRO research is conducted under Army Contract DAHC 19-70-C-0012.

Meredith P. Crawford
President
Human Resources Research Organization

TECHNIQUE OF FIRE OF THE RIFLE SQUAD

General Considerations

Introduction

Combat employment of the firepower of the rifle squad is a major responsibility of the IRSL in both offensive and defensive combat under all conditions of visibility. The IRSL must control the fires of his squad primarily through his IFTLs.

The rifle squad is the basic infantry fire unit, thus direct control of a squad's fire is a responsibility of its leader assisted by the fire team leaders. As a consequence, the precombat training of the rifle squad in technique of fire is of paramount importance since high standards of squad proficiency will facilitate the combat control of the platoon, one of the most difficult of combat tasks.

Individuals should be well grounded in the employment of all the rifle squad's weapons before technique of fire training is initiated. Technique of fire training is designed to weld the squad's individual skills into a smoothly functioning team whose collective fires will achieve greater effectiveness in combat than would otherwise result.

Combat, however, creates many situations where the squad, and even its individual members, must initiate fire without direct orders. Training, therefore, must be thorough and practical in nature so that proper reaction and team effort become automatic. Well-practiced standard operating procedures (SOPs) and battle drills are a major factor in achieving correct unit reaction when combat conditions preclude leader control, particularly when visibility is limited. Realistic SOPs reduce the leader's problem of controlling small arms fire and still permit any desired modification when the situation so dictates. Even though under SOP initial fire is opened upon the initiative of individuals, it is vitally important that leaders subsequently exercise fire control by monitoring and adjusting these fires, especially in overcoming the tendency to fire high in combat, or to avoid firing, or to fire wildly.

Training in technique of fire must prepare the rifle squad to operate as part of the platoon as well as on detached security or patrol missions.

Every member of a rifle squad to include replacements must be cross trained to employ all the platoon weapons since casualties may result in men taking over different type weapons in combat.

Tactical employment of the rifle squad's firepower cannot be separated from other aspects of combat, necessitating that technique of fire training be integrated into tactical training and that squad and team leaders are qualified in all the aspects of small-unit tactics. Particularly in the

offense, firepower cannot be separated from tactical movement, and in the defense, from the selection and organization of defensive positions.

Training in the skilled use of ground and cover, coupled with the employment of suitable combat formations with proper provision for security, must be integrated into technique of fire training. Advance over areas likely to encounter effective small arms fire must be covered by firepower, preferably positioned and alert to locate and neutralize any fire upon such movement. Even in extremely close terrain where fields of fire are short, dangerous open space will be encountered, such as small clearings or trail crossings. Here an advance by bounds or by fire and movement should be made unless effective nonorganic fires, controlled by a forward observer in position, can be relied upon. In the defense the squad must be proficient in the selection of the best available position, its rapid improvement, and the exploitation of preplanned fires for both full and limited visibility defense.

Technique of fire training must include development of automatic ability to assume individual firing positions which permit visual observation of the probable field of fire with minimum exposure of the firer. Habitual adoption of the prone position when any hostile fire is encountered often results in delay and unexpected exposure to preregistered hostile fire in such locations as forward slopes or where tree bursts are likely. Adoption of the prone position should be limited to instances where the actual effectiveness of hostile fire forces such action. Even under these conditions, observation of the foreground must be retained, and early effort made to regain the initiative. It was common practice in World Wars I and II for the enemy to open long-range small arms fire when an American advance reached a line on which hostile artillery and mortars were registered, in the expectation the advance would take to ground where these registered fires would be most effective. Unless actual casualties are being incurred, continuation of an advance is normally the best course of action.

Technique of fire training should normally be conducted wearing the clothing, equipment and combat loads envisaged for combat to ensure that realistic positions, movement and firing positions are adopted, as well as to harden the participants.

Development of justified confidence in individual and squad ability is an important aspect of technique of fire training. Building of false confidence upon unrealistic procedures of limited combat value will inevitably result in the subsequent complete collapse of such confidence under the first tests of combat. The techniques taught must possess direct and maximum transfer value to combat. Every squad member should be convinced that effective fire constitutes his own and his unit's best protection against hostile small arms fire and that any individual who fails to do his part increases the danger both to himself and his unit.

Rapid development of teamwork is promoted by scoring and critique procedures which afford participants early knowledge of the contribution each individual has made to the team effort. The resultant influence of group opinion constitutes a powerful motivating factor upon all participants. In combat, group influence or code still constitutes a strong stabilizing factor. The desire to retain the respect of his comrades, coupled with the individual's personal fear of letting his unit down, goes far in offsetting the fear of injury or death that every rifleman lives with. Thus, the combat effectiveness of a rifle platoon or squad is primarily dependent upon an integrated combination of skilled firepower with exploitation of available ground and cover. These skills and techniques must be motivated by justified confidence in the individual and group abilities of the unit coupled with the determination of every member to do his part.

Responsibility for the development of a rifle squad of this type rests with the IRSL whose effort must be continuous during both training and combat.

Scope

The performances, knowledges, skills, habits and attitudes covered in this paper are those the IRSL must possess to train and lead in combat a rifle squad of the rifle platoon. Where the knowledge or skill in question is one which must be possessed by members of the rifle squad, it is assumed that the IRSL is also qualified and motivated to train his squad to an acceptable standard of proficiency.

This paper deals in greater detail than normal with the precombat training of the rifle squad since combat conditions will often preclude the IRSL's direct control, making precombat training of increased importance.

The combat control of the IRSL of the delivery of fire by his rifle squad includes leadership and supervision in the assignment of firing missions, positions and tactical objectives, instructions relative to initiation and maintenance of fire, including the supervision and control of fire once opened through his IFTLs.

The material in this paper is directly related to all of the papers on tactical operations, especially those papers covering tactical movement and squad formations, battle drill and elementary fire and movement. Directly related information will be found in the papers on Mission, Organization and General Operation of the Rifle Squad and Platoon; Offensive Operations; Defensive Operations; Mounted and Dismounted Platoon Combat Formations and Patrolling.

Materiel

TOE weapons and equipment.

Nonorganic weapons and ammunition available for use.

Captured enemy weapons and ammunition suitable for use.

Maps, map substitutes and map supplements.

Material suitable for construction of prearranged firing positions.

Material, equipment and tools for construction of field fortifications.

Compasses, suitable sketching material.

Performances, Knowledges, and Skills

1. THE IRSL WILL ENSURE THAT HE AND HIS MEN ARE PROFICIENT IN THE INDIVIDUAL KNOWLEDGES AND SKILLS PREREQUISITE TO SQUAD TRAINING IN TECHNIQUE OF FIRE PRIOR TO SUCH TRAINING.

He must : ensure that all men are proficient in determining range by use of appropriate techniques based upon the:

1

- a. 100-meter unit of measure.
- b. halving technique for distances over 500 meters.
- c. required adjustments of range estimates for various types of slope.
- d. appearance-of-objects technique using frequently encountered objects of known dimension such as an individual in various combat postures, windows, telegraph poles, doorways, etc. Used out to 500 meters. (See FM 23-12.)
- e. ranging fire at estimated ranges to verify estimates.
- f. where the situation permits, the "crack-and-thump" technique of determining range which utilizes the time in seconds between the crack of the arriving bullet and the subsequent duller thump of the weapon's firing. (The count should be audible and as rapid as possible to reach a speed of 5 counts a second. The number reached is the range in hundreds of meters which can then be used in connection with range estimation procedures.)

: ensure that all men are proficient in lateral distance measurement by means of the finger measurement method to include:

2

- a. proper fully extended position of the arm and hand.
- b. sighting with one eye to align edge of one flank of object to be measured with corresponding finger as the basis for a finger measurement.
- c. filling space between two extremes of the measured object with adjacent fingers.
- d. determining extent of measured object in terms of included fingers.

: ensure that all men are proficient in the ability to locate and mark the ground location of hidden and obscure hostile targets by means of:

3

- a. the sound of hostile fire or of movement; sound usually indicates only a general location which must be more definitely pinpointed by other means.
- b. movement which attracts the eye; rapid movement being more easily detected than cautious, though unnatural movement such as movement of vegetation caused by an individual also attracts the eye.
- c. unnatural shapes or colors such as a helmet outline or excessive or faded camouflage which attracts attention.
- d. shine, smoke, bright color or flash of muzzle blast constituting definite indications of a precise hostile position.
- e. faulty background such as a skyline silhouette or contrasting background.
- f. suspicious locations which afford good hostile firing positions with concealment and/or cover, which must be considered as occupied and taken under fire. (In addition, when positions of this type are unduly prominent because of isolation, less favorable nearby positions must also be considered and examined, because a wary enemy may prefer proximity to rather than occupation of such an obvious position.)
- g. prominent objects which can be used as reference points to "mark" nearby, inconspicuously positioned targets, to facilitate their subsequent engagement by fire.

: ensure that all men understand the characteristics of rifle, automatic rifle and grenade launcher fire.

4

: practice employment of the squad's weapons from positions which exploit favorable weapon characteristics and minimize weapon limitations, stressing the:

5

- a. importance of the flat trajectory of rifle and automatic weapon fire, especially in achieving grazing fire to the extent that level or uniformly sloping terrain permits.
- b. advantage of enfilade grazing fire, especially across the front of a defensive position, and the methods of achieving such fire.
- c. employment of automatic fire only in short two- to three-round bursts against suitable targets.
- d. hostile formations likely to be encountered and how best to achieve effective fire upon them.
- e. flat trajectory 150-meter range limitation of grenade launcher fire and the 5-meter casualty radius of the grenade launcher round with the weapon's consequent value against area-type targets such as tree snipers and troop formations.
- f. increasing high-angled trajectory of the grenade launcher round at ranges beyond 150 meters which, coupled with the relatively small casualty radius, necessitates accurate range determination at the longer ranges.
- g. sharp angle of fall of the grenade launcher round at longer ranges which permits the engagement of targets in defilade.
- h. Dispersion and range characteristics of available canister rounds.

: ensure personal and unit proficiency in the use of both natural and artificial cover and concealment, to include use of (see FM 21-75):

6

- a. natural cover such as ground hollows, reverse slopes, small folds or depressions, and thick hedge lines as protection from hostile fire.

- b. artificial cover such as foxholes, trenches, culverts, walls and stone buildings as protection from hostile fire.
- c. permanent emplacements, improvised overhead cover, overhang of cuts or foxholes, stone or other strong construction which still permit delivery of effective fire and protection from air or tree bursts.
- d. personal or position camouflage and concealment in shadow, background bushes, high grass or other vegetation. Use of prominent, isolated concealment is likely to draw hostile fire and should be avoided.
- e. available artificial concealment such as burlap camouflage, nets and the use of natural materials in types and quantities blending with adjacent terrain which should be maintained to present natural appearance.

2. THE IRSL WILL ENSURE THAT HIS RIFLE SQUAD IS GROUNDED IN THE TACTICS AND TECHNIQUES OF OFFENSIVE TACTICAL MOVEMENT, WHETHER OPERATING BY DAY OR BY NIGHT, ALONE OR AS PART OF A LARGER FORCE.

He must : ensure personal and unit proficiency in the use of offensive tactical movement control measures to include the assembly area, attack position, line of departure (LD), final coordination line (Final CL), phase line, objective (OBJ), as well as the reorganization on the objective and the consolidation of position.

7

: ensure personal and unit proficiency in the procedures of movement under hostile fire, whether the squad operates alone or as part of a larger force, to include:

8

- a. advance by individual fire and movement when under effective enemy fire, using short 3- to 4-second rushes of single members of a fire team, covered by the fire of the balance of the team; rushers will normally not fire, depending upon the speed and shortness of the rush and the covering fire of their own forces upon located enemy and suspected positions.

b. advance by fire team fire and movement where an entire fire team moves forward, covered by the fires of the other team as well as available supporting fires. (Permits better control and faster advance than individual fire and movement, but requires that hostile fire effectiveness can be neutralized by the fire of one rifle team firing upon the entire squad target. Rush length is dependent upon the cover afforded and the hostile fire encountered.)

c. advance by fire and maneuver, where one fire team operates as the squad base of fire while the other maneuvers to take the encountered resistance at a disadvantage. (Most effective against isolated enemy such as an outpost, a sniper or a machine-gun.)

: know that fire and maneuver is most effective when a covered or concealed approach is available for maneuver and a good field of fire exists for the base-of-fire element. 9

: know that the movement and fire support roles can be rotated between fire teams as dictated by the terrain and availability of firing positions, provided that the moving element does not blanket the fires of its base of fire. 10

: know that a base-of-fire team distributes its fire over the entire target, engaging first those targets presenting the greatest danger to the advance and then upon other known or suspected enemy firing positions, exercising care not to endanger the movement element. 11

: know that the squad fire team organizations are flexible and can be altered to regroup firepower elements, such as automatic rifles and grenade launchers, into a base of fire with the remainder of the squad fire team constituting the maneuver element. 12

: know that the rifle squad must receive practical training in regrouping into elements other than the normal fire team organization, as well as in operating as fire teams to assure maximum combat flexibility. 13

: know that in fire and maneuver, the base-of-fire element must act aggressively to cover the advance of the maneuver element by fire, and that when its firing position is not ideal and the situation permits, it may continue to advance by individual rushes, the balance of the fire team maintaining the volume of fire on the squad target. 14

- : know that the base-of-fire element must move forward aggressively if its fire is masked by the advance of the maneuver element, and that timely decision must be made whether it should join in the final assault or maintain a close-up position covering the assault of the maneuver element, joining the latter to participate in the consolidation on the objective.

15
- : know that a base-of-fire element, operating in support of a maneuver element, automatically assumes responsibility for the entire squad target, and must distribute and increase its rate of fire accordingly.

16
- : know that the maneuver element utilizes available cover and concealment in its advance, realizing that an important aspect of this is the initial selection of the most promising route.

17
- : know that selection of a route affording cover and concealment should initially consider the possibility of flanking maneuver or an attack against the rear of isolated resistance.

18
- : know that threat against the flanks or rear of isolated resistance will frequently cause abandonment of the position once its route of withdrawal is threatened by flanking maneuver.

19
- : know that advance by crawling will frequently be preferable to rushes in crossing ground exposed to hostile fire, especially where low relief cover, such as shallow ditches or ground folds, is available.

20
- : know that practice in advancing by rushes and by crawling over distances up to 100 meters is essential.

21
- : know that as an offensive advance under supporting fire approaches the objective, a line will be reached where the fires must lift to avoid endangering the assaulting troops (Final CL normally 100 to 150 meters short of the objective) and that the final advance (the assault) must be under cover of the fire of the assaulting unit.

22
- : know that the final assault in squad line can be covered by the assault fires of the unit itself, provided that the objective is not protected by mines or other obstacles, and that the assaulting troops can gain and maintain sufficient fire superiority to support the advance.

23

: ensure that the rifle squad's members are proficient in the delivery of assault fire while advancing rapidly in squad line; that individuals keep their fire low and distribute it laterally against visible enemy and likely enemy firing positions; and that they exercise care not to endanger friendly personnel.

24

: know that when fire superiority cannot be gained and maintained after the supporting fires lift, that further advance must be by fire and movement until a position is reached close enough to the objective to permit final closing by either:

25

- a. rapid advance employing assault fire.
- b. a full-speed rush, preceded by a shower of hand grenades and grenade launcher fire.
- c. a full-speed rush by part of the squad, covered by the fires of the balance from forward positions, permitting fire upon the objective which will not be blanketed by the rush.

: know that during the critical assault phase, every means must be taken to demoralize and intimidate hostile defenders, including:

26

- a. use of yells and war cries, particularly those the enemy has learned to fear as a symbol of impending danger to them.
- b. employment of all available weapons, including grenades, against pockets of resistance and dug-outs, and the use of bayonets, knives, and other shock-action weapons against individuals in close combat where firepower cannot be used.
- c. use of a smoke cover in event fire superiority cannot be gained.

: know that maintenance of control during the assault is difficult and can be facilitated by:

27

- a. assignment of general areas of responsibility on the objective to each fire team.
- b. prior training which develops practical operating procedures or battle drills.
- c. prearrangement for communication with IFTLs by signal and phase reports.

d. designation of rally points within the objective with signals for movement thereto.

: know that offensive operations under limited visibility conditions, including night as part of normal operations, are frequently employed to achieve surprise, maintain pressure and exploit success, or reduce the effectiveness of hostile firepower. 28

: know that limited visibility operations designed to achieve surprise through stealth must be prepared to exploit firepower, illumination, smoke and daylight techniques in event the operation is discovered. 29

: know that the increased difficulties of movement and control in limited visibility attack are more than offset by the reduced effectiveness of defensive firepower, coupled with the psychological advantages of attack in darkness, and above all by the exploitation of the initiative of the offensive, making limited visibility attack, including night, a frequently employed method of closing with a strong defensive position or a defender low in morale. 30

: know that sound, practical training, coupled with adequate daylight reconnaissance and thorough advance planning, are the basic requisites for successful limited visibility attack. 31

: know that the difficult control and movement problems of limited visibility attack necessitate use of column formations as far forward as possible, together with the use of additional control locations termed "points of departure," "platoon release point," "squad release point," and "probable line of deployment." (See FM 7-15.) 32

: know that in limited visibility attack, the column formation is retained by both platoon and squads successively to the probable line of deployment unless the attack is discovered earlier. 33

: know that the detailed reconnaissance preliminary to limited visibility, including night attack, must determine whether the objective is protected by wire, mines or other obstacles, and, once located, advance provisions made for the passage of such obstacles. Under circumstances where obstacles cannot be located, the IRSL will assume the objective is protected and make advance provisions for the passage of any possible obstacle. 34

- : know that since the probable line of deployment for such attack is on the enemy side of a protected obstacle, the chance of hostile, premature discovery of the attack during the passage of the obstacle is greatly increased.

35
- : know that once a night attack is discovered, pre-planned illumination, if available, is used by the attacker in conjunction with supporting fires to permit continuation of the attack, employing daylight procedures.

36
- : know that when a night attack is discovered during the passage of the obstacle protecting the objective, smoke must be placed upon the objective, since the assaulting element normally is too close to the objective to permit use of other supporting fires, and that the smoke generated by supporting fires is supplemented and continued by smoke grenades carried by the assault.

37
- : know that, even when the obstacle has been breached in advance by preparatory fires, last-minute reconnaissance must ensure continued existence of the gaps and even then the assaulting element should carry with it ample smoke grenades and bangalore torpedoes or field expedients which facilitate rapid destruction of unbreached sections.

38
- : know that where an obstacle protects a defensive position, the forming of squad line on the enemy side of the obstacle will be impracticable, and the assault best made by either continued fire and movement or a final full-speed rush to close with the objective.

39
- : know that where the objective is not protected by an obstacle and the assaulting element has not been discovered, the squad, as part of the platoon, continues silently forward in squad line until discovered, when assault line is initiated, normally on order of the IRPL.

40
- : know that scattered, desultory fires by small hostile elements must not be taken as loss of surprise, hence the IRPL must consider the accuracy and nature of the hostile fire before deciding the attack has been discovered.

41
- : know that when resistance is encountered short of the objective, it is fired upon immediately and the IRPL decides whether to:

42

- a. bypass the encountered resistance and continue toward the objective.
- b. deploy all or part of the platoon and move aggressively against the resistance employing fire and movement.
- c. call for supporting fires upon the resistance prior to attacking it.

: know that when such resistance is encountered, his squad, as part of the platoon, must execute its part of the platoon action on the basis of limited fragmentary orders and prearranged plans. 43

: know that in offensive operations a skillfully positioned sniper or automatic weapons crew can cause delay to movement and casualties to key personnel because of the difficulty of locating such resistance with sufficient accuracy to permit effective engagement. 44

: know that the advance recognition and designation of the best shots in the squad will facilitate their quick reaction engagement of located isolated targets. 45

: know that where an isolated target cannot be definitely located, as, for example, a tree sniper or a well-concealed automatic weapon, it can best be engaged by automatic rifle fire as an area target employing two- to three-round bursts. 46

3. THE IRSL WILL ENSURE THAT HE AND HIS MEN ARE PROFICIENT IN THE EMPLOYMENT OF ASSAULT FIRE AS INDIVIDUALS AND AS MEMBERS OF THE SQUAD, BOTH BY DAY AND BY NIGHT.

He must : ensure, by practice, that all members make necessary preparation prior to employment of assault fire, to include: 47

- a. checking ammunition and, where necessary, cleaning it and magazines and ensuring that magazines work smoothly.
- b. when sufficient tracer ammunition is available, load magazines so that the first two rounds and the last two rounds are tracer to provide, day and night, a visual cue:

(1) for aiming, particularly after changing magazines.

(2) when reload is necessary.

- c. carrying magazines with tops of ammunition cases closed but not fastened, to facilitate reloading, and, if applicable, shifting other items on the harness to prevent interference with withdrawal of magazines.
- d. grenade launcher men segregating canister rounds in carrier to ensure availability for short-range use and to prevent premature use.
- e. men armed with pistol as personal protective weapon, checking readiness, to include condition of ammunition and magazines and that holster is located to safeguard against dirt or mud during movement.

: ensure that all squad members are able to deliver effective assault fire employing proper techniques involving:

48

- a. use of proper firing position employing shoulder or pointing procedures, depending upon range and situation, the shoulder position being used at longer ranges against located targets and the pointing technique at other times.
- b. riflemen employing semiautomatic fire while automatic riflemen fire in short two- or three-round bursts.
- c. rifle grenadiers firing as rapidly as possible consistent with ammunition supply.
- d. right-handed riflemen firing each time left foot strikes ground; left-handed men when right foot strikes ground. (Where distance to be covered or ammunition limitations require conservation of ammunition, distance between firings is increased with firing still on the proper foot.)
- e. offsetting the tendency to fire high, particularly when using the pointing technique at night, by making a conscious bold depression of muzzle after achieving what is considered good alignment and subsequently adjusting, based upon observation of tracer or bullet strike.

- f. maintenance of acceptable alignment of the advancing line upon a base man to ensure reaching objective together and avoiding risk of hitting adjacent comrades.
- g. use of sensing of adjacent muzzle blast in maintaining proper alignment.
- h. regulating interval on the basis of SOP unless another interval has been ordered, and maintaining the advance, once launched, without interruption unless wounded or a halt is ordered.
- i. riflemen reloading rapidly to prevent undue gaps in fire and grenadiers firing as rapidly as possible, employing proper techniques and shifting to the canister round as the advance gets within the arming distance (31 meters) of the HE round.
- j. riflemen and automatic riflemen retaining empty magazines, placing them inside jacket or in a bag attached to their belt in a location which will not interfere with reloading.

: ensure that effective fire distribution of the squad's fire is employed in the assault, necessitating that:

49

- a. team leaders and riflemen fire on that portion of the target to their front, extending laterally as far as safety of adjacent squad members permit, with priority to specific target indications and suspected enemy locations.
- b. automatic riflemen primarily engage enemy supporting weapons located within the squad's area of responsibility. Lacking such targets, they distribute fire over that portion of the target assigned to their fire team.
- c. grenadiers primarily engage enemy supporting weapons on the squad's area of responsibility provided they have sufficient illumination to determine range or to adjust their fire. Lacking such targets, they distribute fire in width and depth across the squad's area of responsibility until they come within the minimum 31-meter range for the high explosive round; thereafter they shift to using the canister round or their secondary weapon against located targets for personal protection.

- d. the squad leader controls the squad including monitoring its fire. He may fire if his fire becomes more important than control, though the squad leader normally does not fire during the assault except for his personal defense.

4. THE IRSL WILL ENSURE THAT HE AND HIS MEN ARE PROFICIENT IN THE OCCUPATION AND ORGANIZATION OF A DEFENSIVE POSITION AS INDIVIDUALS AND AS MEMBERS OF A RIFLE SQUAD, BOTH BY DAY AND BY NIGHT.

He must : realize that a controlling advantage of defensive combat is the capability of advance preparation of coordinated fire plans which fit weapon fire characteristics to the selected terrain to create an effective fire barrier to any hostile attack, regardless of visibility. 50

: know that limited visibility conditions (including night) differ radically from the direct fire possibilities of daylight combat, necessitating separate provisions for full and limited visibility fire plans. 51

: know that adequate provision for defense includes proper combination of efficient fire distribution techniques and teamwork, backed by prearranged fire plans or SOPs that reduce the problems of fire control in the defense, especially under limited visibility conditions, whether caused by night, smoke, or climatic conditions. 52

: know that where the enemy knows the defender's location, particularly under limited visibility conditions, the defender must increase the strength of the occupied terrain by well-coordinated defensive fire plans, otherwise he is immobilized without means for countering the initiative of an attacker; under such conditions, movement to a previously reconnoitered position at or near darkness is preferable to remaining in an unprepared position. 53

: know that coordinated fire plans and techniques of fire control and fire distribution must be flexible and favor the development of well-understood alternatives. 54

: know that the defense may be adopted under conditions which permit systematic deliberate preparation and organization of the unit's position, or may occur under time pressures which vary from the necessity of occupying unfavorable terrain under heavy hostile attack to the possibility of advance selection of terrain under conditions where contact is imminent and the priority of defensive preparations critical.

55

: know that even under the most unfavorable conditions, the organization and improvement of a defensive position is progressive, and where combat conditions force the occupation of the position under fragmentary orders supplemented by unit SOP, the subsequent reconnaissance, supervision and guidance of the IRPL is of primary importance in achieving an eventual coordinated fire plan, involving, where essential, modification of squad and individual positions.

56

: know that his squad may defend as part of the platoon in one of two basic defense formations:

57

- a. three rifle squads approximately abreast, when the platoon defends as part of a larger unit with the platoon flanks and rear protected by other units.
- b. two rifle squads forward with the third to the rear (essential when the platoon's flanks and rear are not secure and it is exposed to attack from more than one direction); when a platoon perimeter is desired, the rearward squad organizes to the rear and the forward squads bend their flanks sufficiently to form the closed perimeter.

: know that in both these formations:

58

- a. his squad must occupy its proper position within the platoon defense based upon prearranged defensive battle drills or upon a platoon order which will be only as complete as the situation permits.
- b. machineguns are positioned to achieve grazing fire across the platoon's front or alternatively to cover dangerous approaches, antitank weapons and other attached weapons are positioned by the IRPL to best meet the anticipated threat, and supplementary positions for squads and crew-served weapons are located to increase defensive flexibility and permit achievement of defense in any dangerous direction.

- He will : know that battle drills or SOPs for each of the two defensive dispositions must be developed and practiced to permit the rapid deployment into the defense dispositions required in a sudden meeting engagement with a superior force; in each case deployment can be based upon an indicated location, such as the IRPL's position or a specified ground location, each squad moving into its prearranged relative position to the indicated hub with due regard to the available terrain and the requirements for intersquad coordination. 59
- : know that practice of such defensive battle drills progressively improves squad and individual ability to select the best available positions, while the supervision of the IRPL and all NCOs gradually achieves the coordination of a deliberately organized defense. 60
- : know that, as a minimum, a defense order should provide: 61
- a. establishment of local security by each squad and, where necessary, additional security by the platoon.
 - b. each squad and crew-served weapon with a position area to organize.
 - c. a sector of fire for each weapon.
 - d. a work priority to include provision for full and limited visibility defense.
 - e. coordination and control measures not included under SOP.
- : regardless of sector of fire responsibilities, know that he is at all times responsible for the unit's security and that when danger from the flanks or rear exists, surveillance of the danger area must be continuous, in addition to the surveillance of the sector of fire. 62
- : know that platoon and squad SOPs, which provide for continuous 360° surveillance whether halted or moving, can be readily modified when reduced areas of surveillance are acceptable. 63
- : know that two-man foxholes (or positions) provide companionship and reduce the fatigue of surveillance by permitting rotation of local security duties among the occupants. 64

- : know that two-man foxholes (or positions) increase chances of multiple casualties from a single burst, especially from grenades or high-explosive shells, and also complicate coverage of wide fronts in close terrain or in limited visibility. 65
- : know that the use of paired one-man foxholes, within arm's-length distance of each other, reduces danger of multiple casualties from a single burst while making some provision for companionship. 66
- : realize that the squad may be ordered to organize a defensive position under conditions which permit deliberate systematic procedures, or it may be forced to organize a hasty defense under time pressures dictating the best location of the defense and the best defensive organization possible under existing conditions. 67
- : where deliberate organization of a defensive position is feasible, ensure that the defense order includes all possible guidance to minimize the need for subsequent modification of positions, that it is understood, and that the squad moves directly to its firing positions, establishes local security, and initiates organization of its position. 68
- : where hasty organization of a defensive position is required due to imminent hostile contact or enemy pressure, ensure that each man is assigned a sector of fire occupying the best available terrain, and that essential coordination and improvement of the position is progressively carried out during any periods the situation permits. 69
- : maintain continuous supervision of the organization of the defense, whether it be adopted under deliberate or hasty conditions, to ensure that:
 - a. local security is adequate and as economical as the situation permits, since excessive security prematurely exhausts the squad and can result in defeat.
 - b. his supervision is thorough and includes verification from individual firing positions of each individual's field of observation, sector of fire, preparation of his foxhole or emplacement, and proper location and installation of protective mines or other obstacles and camouflage.

- c. automatic weapons and grenade launcher positions are located where possible to cover the entire squad sector of fire or, lacking this, to overlap in coverage of the squad sector.
- d. fire team leaders are on line, assigned a sector of fire, and positioned to facilitate control of fire team and to observe his position.
- e. work priorities are being aggressively executed to include clearing fields of fire, digging in, camouflage of positions as work progresses, construction of supplementary positions and preparation of range cards for any crew-served weapons that may be attached.
- f. full and limited visibility fire plans are coordinated within the squad, between squads, and with crew-served weapons to best utilize available firepower in taking advantage of the natural defensive characteristics of the terrain.
- g. his men know the routes to be used within the position and to the rear; the evacuation details, to include a collecting point within the position for dead and wounded; and the precise location of his position and the platoon CP.
- h. supply measures are understood and complete, to include provision for food, water, ammunition, communication equipment or weapons, and material for obstacles and shelters.
- i. noise and movement is kept to a minimum, camouflage is used, and no evidence of occupation of the position is permitted--such as exposed fresh earth, discarded cigarette or other containers, mess gear, or other objects--that is likely to draw attention from ground or air observation.

He must : ensure completion of plans of fire providing coordinated coverage of the squad's defensive sector that utilizes the fires of the squad to best advantage, especially for:

71

- a. covering, from individual primary positions, those areas where the fires of the organic, attached, or supporting machineguns could not be used to advantage, including defilade areas within the ranges of grenade launchers and hand grenades.

- b. covering areas defilade to flat trajectory fires to exploit the range capabilities of any weapon fires available to the squad, beyond the planned fires of the squad's grenade launchers and hand grenades.
- c. covering the squad's supplementary positions in the same detail as the primary positions, to include plans for the occupation of the supplementary position using those personnel from the primary position who can best be spared when the squad must occupy both primary and supplementary positions.
- d. coordinating the squad's fires with the plans for withdrawal of any security posted forward of the squad position, with any protective obstacles, and with Claymore and trip flare defenses.

: ensure that preplanned fire preparations have been completed for the squad, to include:

72

- a. properly placed stakes for directional guidance of rifle, automatic rifle, grenade launcher, and hand grenade fire (for limited visibility defense).
- b. adequate provision by improvised measures for maintenance of proper barrel elevation for rifles, automatic rifles, and grenade launchers; and consideration of the range problem, to include practice throws where possible, using appropriately-sized stones or other improvised means, by the men designated to cover close-in defilade with hand grenades.
- c. check of platoon plan for organic and on-call illumination wherever possible, requesting location of illumination to avoid illumination of the platoon position itself.
- d. flat trajectory grazing fires for all available flat trajectory weapons laid to exploit the delay achieved by protective wire and mines.
- e. sufficiently detailed advance instructions to the squad to permit conduct of the defense in the absence of instructions caused by limited visibility.

: furnish to the platoon leader a sketch of the plan of fires for the squad in sufficient time and detail to aid him in preparation of the platoon sketch furnished the company. 73

: where the defense of the flanks or rear of the platoon sector is dependent upon adjacent units, coordinate with the defensive positions of the units involved and, where possible, arrange the exchange of sectors of fire to improve defensibility. 74

: where the squad is completely responsible for its own defense, as when operating alone on an outpost or patrol, prearrange possible essential adjustments in defensive dispositions and supporting fires to counter dangerous situations. 75

: conduct rehearsals of defensive movements such as occupation of supplementary positions in part and in entirety. 76

: designate a squad rally position as a defensive hub for the squad and the signals for the occupation of such a position and, where possible, practice its occupation. 77

5. THE IRSL WILL ENSURE THAT HE AND HIS MEN ARE PROFICIENT IN THE TECHNIQUES OF SQUAD RIFLE FIRE IN DEFENSE UNDER FULL VISIBILITY (DAYLIGHT) CONDITIONS.

He must : ensure that he and his men realize that though combat targets do not conform to set patterns, they will normally fall within these three broad types: 78

- a. linear targets which possess width with limited depth, and are the type most often confronting a defense.
- b. point targets, such as a sniper, weapons position, or a bunker, which are of a size requiring use of a single aiming point, and from which effective fire can often cause significant casualties and delay to movement.
- c. area targets which have both considerable depth and width; while targets such as a wave attack may exist, the individual rifleman will be primarily concerned with the forward elements of such targets as most dangerous to him. At times a series of point targets, such as tree snipers, may constitute an area target, but wherever individual targets can be located they are best engaged as point targets.

- d. moving targets, which constitute a variant of a point target, require special training if moving in a direction and with a speed requiring the use of leads.
- e. column targets having greater length than width, such as an enemy column formation; since such targets are vulnerable to frontal enfilade small arms fire, they are rarely encountered in a rifle squad defensive sector.

: ensure that his squad is trained to maintain continuous effective security against surprise based upon prearranged dispositions and effective surveillance. Two such types of surveillance are employed depending upon the situation:

79

- a. at a halt, or as part of a larger unit when the squad's flanks and rear are effectively protected by other units:
 - (1) riflemen search that part of the squad sector to their immediate front, usually about one-third of the squad sector unless prohibited by terrain.
 - (2) team leaders search their team's portion of the squad sector if visibility and fields of fire permit. If visibility is limited by terrain, it may be necessary for team leaders to take over surveillance of an individual sector of observation and thus reduce the sectors of the other fire team members.
 - (3) automatic riflemen and grenadiers search the entire squad sector, or as much of it as possible, concentrating upon locating their primary target-- enemy automatic weapons.
 - (4) the squad leader maintains 360° surveillance of the squad's position with major attention to the squad's sector of fire and for signals or communication from the platoon leader.
- b. when the squad is in movement or when halted under conditions where the squad's flanks and rear are not effectively protected by adjacent units, the squad maintains continuous 360° surveillance employing any well-understood procedure which provides that:

- (1) each fire team is responsible for a 180° sector of surveillance within which each individual searches an appropriate subsector depending upon his position within the formation.
- (2) team leaders observe, wherever possible, the entire 180° sector of their fire team and remain alert for signals from their squad leaders.
- (3) the squad leader maintains 360° surveillance of the observable area, with major attention to any assigned sector of fire or danger area, as well as remaining alert for signals or communication from the platoon leader.

: ensure that the fire of his squad will be effectively applied and controlled despite the noise, confusion, and stress of combat, necessitating that he utilize the fire control procedures best suited to the situation and involving minimum exposure to hostile fire, to include:

80

- a. standing operating procedures which have been practiced by the squad and are applied automatically without command; such well-understood procedures can be readily varied to meet the situation with greater ease and effectiveness than completely new procedures can be improvised.
- b. prearranged signals, visual or sound, which can be utilized as part of squad SOPs and must be understood and practiced; sound signals include whistle or prearranged rifle fire sequences; and visual signals, usable only when visibility exists between sender and receiver, include pyrotechnic and the standard arm-and-hand signals, amplified as desired. Both visual and sound signals sacrifice security to varying degrees and under close contact may expose the user to hostile fire.
- c. oral fire control orders which are effective when the situation permits their use; unfortunately, the noise and distractions of combat often limit their effectiveness at the most critical times, making undue dependence upon oral orders dangerous and the availability of supplementary methods essential at all times. In close combat, use of oral orders may draw hostile fire.
- d. passing of orders from man to man, which is a usable method when the instructions are simple and brief, for example, "Halt" or "Take cover." Longer orders are often garbled, and in any case where speedy reaction is essential, they are time consuming.

e. personal contact, which involves the squad leader's movement to the individuals to issue orders; personal contact is a frequently used method when other methods appear unfeasible. Under fire, this method results in excessive leader casualties; hence every means, such as SOPs, timely advance instructions, or prearranged signals, should be employed by units under effective hostile fire.

f. use of team leaders. Maximum use of team leader control of fire simplifies the squad leader's difficult task. Thorough team leader training, coupled with detailed advance instructions, reduces the requirements for frequent communication, particularly in monitoring the effectiveness of the squad's fire once it is opened.

: ensure that all squad members effectively employ the "search-fire-check" SOP both prior to and after opening fire. This involves:

81

a. visual search of their assigned sectors of fire within the squad sector.

b. firing upon those targets appropriate to their weapon which appear within their individual sector of fire.

c. visual check by team members for instructions from their team leaders, who in turn maintain a visual check with their squad leader, to facilitate prompt receipt of instructions passed by signal or other means.

d. varying the time spent upon each element of the SOP with the situation. Thus, in a movement to contact, major emphasis is upon the search element, secondary emphasis upon the check, and none upon the fire element; while in firing during the last stages of a hostile assault, little use is required of the search element, with reduced attention to check in order to permit maximum fire upon clear and dangerous targets.

e. increasing the sector of visual search assigned each man where danger exists to the squad's flanks and/or rear, to include squad visual search of the entire danger area up to 360°. During a fire fight, individuals can engage targets outside their respective sector of fire provided no target exists within their own sector; they maintain visual search of their sector and are prepared to engage any target detected within their primary sector of fire; and they check for instructions with their team leader.

f. monitoring the effectiveness of team leaders' control and the effectiveness of the SOP.

: ensure that all squad members, without order, effectively employ the "return fire" SOP against effective enemy fire; this normally permits engagement of any hostile target upon the individual initiative of any squad member so endangered by hostile fire. Thus, in an advance, a point man will fire at a close target without instructions, and in the defense, hostile targets located within a previously designated "fire-at-will" line will be engaged without awaiting orders.

82

: prior to hostile contact, ensure that all individuals understand the specific conditions under which fire can be returned without orders, particularly any deviation from the general rule that effective hostile fire can be returned upon individual initiative when the individual in question is so endangered that his safety requires returning fire.

83

: specifically emphasize in advance when the maintenance of secrecy or plans to achieve maximum surprise effect, as in an ambush, requires that fire be opened only on order and the "return fire" SOP is inoperative.

84

: ensure that control of fire is facilitated and simplified by the maximum use of SOPs, such as:

85

a. riflemen are always responsible for targets which appear within their individual sectors of fire, and where they are firing at targets outside this sector and detect a target within their portion of the squad sector, must shift fire and engage this target without order.

- b. automatic riflemen and grenadiers are primarily responsible for engaging enemy automatic weapons anywhere within the squad sector. When such a target appears, the automatic riflemen and grenadiers must shift fire without delay and engage it.
- c. when the squad engages a surprise target, each man will fire a prescribed amount of ammunition, such as one magazine per rifle and automatic rifle, at the maximum effective rate. Thereafter, fire will be decreased to maintain fire superiority with maximum economy of ammunition.

: know that engagement of new and surprise targets, once the fire fight is underway, constitutes a difficult aspect of fire control which can be expedited by practice and understanding of SOPs; for example, when the squad is engaged with a linear target and a hostile machinegun (point target) opens fire from a different position, signal the appropriate fire team leader to shift his automatic riflemen and grenadiers to the machinegun target, or shift the fires of both grenadiers to the machinegun target when the terrain in either the original target location or the position of the machinegun favors diversion of grenade launcher fire to the new target; or shift the fires of both automatic riflemen to the new target, especially if this target is beyond effective grenade launcher fire (350 meters).

86

: ensure that each fire team can shift all or part of its fire to a new target in minimum time through the use of well-understood fire control procedures, including:

87

- a. any of the previously prescribed procedures.
- b. well-understood and practiced SOPs, which include:
 - (1) alternative signals or commands indicating a new target.
 - (2) alternative signals or commands indicating direction of a new target and nature, point or linear.
 - (3) alternative signals or commands for fire team, grenade launcher, or automatic rifle.
 - (4) prearranged SOP for fire team leaders to employ grenade launcher or automatic rifle fire against certain types of targets, which permits the fire team leader to designate who within fire team would engage the new target.

- c. prearranged signals, oral or visual, for all weapons to fire their final protective fires within individual sectors of fire at maximum rate until required to stop.
- d. prearranged signals, oral or visual, for all weapons to cease fire; due to the noise and distraction of a fire fight, these arrangements should be as unmistakable as possible, to include SOP to pass the word.
- e. prearranged SOPs to facilitate monitoring, distribution and effectiveness of fires being delivered, to include signals and/or orders for:
 - (1) point target, concentrate fire.
 - (2) cover wider sector, indicate direction.
 - (3) check your men's (or indicated man's) fire.
 - (4) alert--new target.
 - (5) fire too high.
 - (6) fire too short (or low).
 - (7) use your grenade launcher.
 - (8) use hand grenades.

He will : ensure that the squad applies effective fire to combat targets encountered, based upon fire commands which will vary as to method of delivery and amount of detail to meet the tactical situation and such of these factors as apply (see FM 23-12): 88

- a. include those of the six elements of a fire order (alert, direction, target description, range, method of fire, command to fire) as time, terrain, noise, confusion, security requirements, troop dispositions, and state of training allow.
- b. omit those elements made unnecessary by the obvious nature of target and the existence of practiced SOPs.
- c. consider the relative exposure and danger involved in the methods of delivery considered.

: ensure in training and in combat that his squads are able to receive and utilize the alert for fire order by any of a series of methods given either alone or in appropriate combination, to include:

89

- a. oral command from leader's position, combat conditions permitting.
- b. alert signal from leader's position, visibility and other combat conditions permitting.
- c. personal contact with individuals concerned; this method necessitates dangerous leader movement to the individuals, but is useful between IRPL and squad leaders, squad leaders and team leaders, and team leaders and adjacent automatic riflemen and grenadiers.
- d. passing the word between individuals within squads and fire teams, the tactical situation permitting.
- e. improvised methods, such as tossing a dirt clod or stone.
- f. automatic inclusion with another element of the fire order, such as using tracer to mark target location and then checking to see if alert was received.

: ensure in training and combat that individuals and fire teams of his squad are proficient in utilizing the direction element of a fire order given, alone or in combination, by any of a flexible series of methods, to include:

90

- a. orally, from leader's position, combat, time, and security conditions permitting.
- b. pointing, using arm or weapon, from leader's position or after movement to recipient's position, time, combat, and security conditions permitting and the target being sufficiently obvious.
- c. personal contact with those concerned; time, combat, and security conditions permitting; most useful between IRPL and squad leaders, squad leaders and team leaders, and by team leaders to adjacent automatic riflemen and grenadiers.

- d. passing the word between individuals, the tactical situation permitting; most useful within squads and fire teams to correct observed errors.
- e. "watch my tracers," the most useful method in combat, combines target position location with direction and, under prearranged SOP, can also include the alert and target extent.
- f. use of a reference; combat conditions permitting, the direction and location of an obscure target, orally designated, can be facilitated by indicating its direction from a prominent, recognizable ground feature as a reference, for example, "Left Front, Reference Trail Junction."

: ensure in training and combat that his men utilize the target description element of the fire order whenever the combat situation makes its inclusion in the order necessary and feasible, to include the type target and, where possible, its extent and composition, considering:

91

- a. oral description, used whenever time, noise, confusion, and tactical conditions permit, whether from the leader's or recipient's position.
- b. passing the word between fire team leaders and other individuals is practicable at times and should be encouraged where individual firers are unable to locate the target or its true extent.
- c. tracer designation of the target includes the essentials of the target description since, once located, its character is usually as visible to the firers as to the leader; where the extent of the target is known to the leader, its flanks can be indicated by finger measurement or extent in meters, or marked by tracer, in addition to the target center; unless all firers can see the entire target, marking of multiple locations by tracer may be misleading.

: ensure both in training and in combat that his men are proficient in utilizing the range element of the fire order whenever the combat situation makes its inclusion in the order necessary or feasible:

92

- a. range in meters can be given orally or by hand signals whenever combat conditions and visibility permit, for example, as "two hundred" or "four five zero"--the terms "range" and "meters" being omitted as unnecessary.
- b. the range element of the fire order serves to establish a point along the indicated direction line to facilitate target detection and as the barrel elevation factor essential in aiming at the target.
- c. the range can be omitted from the fire order when the target is obvious and the range short, or when the firer's training permits individual determination.
- d. tracer indication of target location permits elimination of the range element in the fire order except where the range is long and range determination difficult from the firer's position.

: ensure in training and combat that his men are proficient in using the method of fire element of the fire order whenever the combat situation makes its inclusion in the fire order necessary or realistically feasible:

93

- a. oral or hand signal designation of firers can be given whenever combat conditions and visibility permit, for example, "Automatic riflemen, two magazines."
- b. when the alert element of the order adequately indicates those to fire, this element can be omitted unless it is desirable to specify the ammunition to be fired, rather than control the fire subsequent to its opening.
- c. the development of well-understood SOPs governing ammunition expenditures normally reduces the need to announce ammunition expenditure to specific exceptions and can be delegated to fire team leaders in the majority of cases where only the fire of specific members of the fire team in question is desired.

: ensure in training and combat that his men are proficient in using the command to fire element of the fire order under practiced procedures:

94

- a. oral or signal command to open fire can be used whenever time and the tactical situation permit.
- b. when surprise fire or shock effect is desired and the tactical situation permits, the oral command or signal "At my command" or "At my signal" should precede the fire order.
- c. when the tactical situation precludes use of a fire command, as in an ambush situation, a prearranged signal may be used to open fire--such as the initiation of fire by designated personnel, the detonation of a positioned Claymore, or a pyrotechnic signal.
- d. authority to open fire may be delegated to individuals in advance under specified conditions such as under the "return fire" SOP, or when an enemy is seen within a previously prescribed "fire-at-will" line.
- e. the command to open fire is normally given without time interval at the end of any fire order, whether formal or informal, unless prearrangements have made such a command unnecessary.

He must : indoctrinate all members of the squad to realize that the six-element formal fire command provides a common basis useful in handling the varied informal fire commands required by combat.

95

: ensure that all members of the squad are qualified in the use of varied types of informal fire commands to the degree required by their potential duties, including the ability:

96

- a. to fit the informal fire command to the situation encountered, retaining the essential elements of the formal fire command to the extent possible.
- b. to utilize prearranged SOPs which combine essential elements of the formal fire command in shortened procedures usable under difficult combat conditions; as an example, tracer fire can indicate the target center (point) when combined with a signal or command indicating a target of width. The coverage of the target is left to the judgment of the individual firer, subject to leader's subsequent monitoring.

He will : ensure, in defense, that a sector of fire is promptly assigned to each fire team, that it is organized by the squad leader, and that:

97

- a. the sector of fire is kept under continuous surveillance on a 24-hour basis.
- b. where the flanks or rear of a squad sector are exposed, a sector of surveillance is assigned to cover the entire danger area to include 360° surveillance, where necessary.
- c. a "fire-at-will" line is designated which is normally at a range beyond which the squad's weapons fire is less effective than artillery or mortar fire. Within this line, individuals may immediately engage detected enemy personnel by employing appropriate techniques; personnel targets detected beyond this range are reported to the squad leader, who will take action to:
 - (1) call for prearranged indirect fire on the target.
 - (2) designate how the target will be engaged by the squad or designated members, if indirect fires are unavailable.
 - (3) have squad members engage enemy individuals who have become scattered by the fire, if artillery and mortar concentrations are employed.
 - (4) have squad members, under the "return fire" SOP, engage against effective hostile fire which is beyond the "fire-at-will" line but within maximum effective range of the squad's organic weapons.

He must : ensure that the squad engages a line of enemy personnel (linear target) which is within its sector of fire with proper fire distribution:

98

- a. riflemen fire initially at that part of the linear target most dangerous to them until such targets are eliminated; they next engage other targets within their individual sector of fire or that part nearest their position, first firing at known enemy positions, then distributing fire against suspected or likely enemy locations within or, lacking targets within, adjacent to the individual sector of fire; surveillance of the individual sector of fire is maintained, however, and targets sighted are engaged.

- b. automatic riflemen have as their primary target automatic weapons located anywhere within the squad sector and/or firing from fixed position in support of enemy personnel; lacking such targets, or once they have been neutralized by their own or other fire, they distribute fire over that half of the linear target of the squad nearest their position. The basic priority for automatic weapon fire is against the greatest threat to the squad's position.
- c. grenadiers use the same distribution as automatic riflemen, paying special attention to the delivery of prearranged fires utilizing stakes marking defilade ground or other hidden areas which might be used by enemy personnel.
- d. team leaders engage a linear target using the rifleman's distribution of fire, combining observation of their fire team's target with periodic check with the squad leader for signals or other instructions relating to their fire team's fire control or movement.
- e. the squad leader observes and monitors the fire of his squad, combined with frequent checks with the platoon leader for signals or instructions affecting his squad's fire control or movement; where the squad is exposed to danger from the flanks or rear, the squad leader maintains surveillance of the danger areas and may designate specifically, or by SOP, additional surveillance of these areas by other squad members.

He will : ensure that the squad engages an area target containing enemy personnel by employing the lateral distribution used against a linear target, except:

99

- a. fire is first distributed across that part of the area nearest their position.
- b. initial fire is directed at known enemy positions and subsequent fire against suspected enemy locations.
- c. in the engagement of small vertical areas, such as tree sniper positions, fire is maintained on the most dangerous portions initially and then distributed over the entire suspected area for one or two magazines, due to the difficulty of knowing when such fire has been effectively neutralized.

- d. an area consisting of a hostile firing line supported by automatic and crew-served weapons in a rearward position is engaged as a linear target, combined with point target engagement of the supporting weapons, in accordance with the priority of greatest danger to the rifle squad in question.

He must : ensure that the squad engages a point target employing concentrated fire with volume, rate and type of fire dependent upon the nature of the target (covered or exposed) and the weapons engaging it:

100

- a. covered targets vary with the nature of the cover and the size of their vulnerable area, for example, an opening in a building, a covered foxhole, or the firing ports of a bunker.
- b. exposed targets are those located in the open, even if in position defilade to flat trajectory fire, necessitating their engagement by M79 high-explosive fire, hand grenades, or other suitable curved trajectory fire.
- c. covered targets require pinpoint accuracy of fire, promoted by use of a weapon support, to achieve maximum effect.
- d. riflemen can effectively engage exposed point targets out to 460 meters; however, their fire at the longer ranges (beyond 300 meters) is less effective than automatic rifle fire.
- e. riflemen may engage covered point targets provided they use a weapon support to increase accuracy; such employment is alternative to the employment of automatic rifles, particularly at ranges in excess of 300 meters.
- f. automatic riflemen engaging exposed point targets, such as weapon crews, normally employ automatic fire using a two- to three-round burst; where rapid attainment of fire superiority is essential, both squad automatic riflemen may engage the target by employing longer bursts of fire initially, reducing their rate to two- or three-round bursts once fire superiority is gained, and alternating their fire; at ranges beyond 460 meters, semiautomatic fire is employed to avoid undue dispersion of the shot group.

- g. automatic riflemen engaging covered point targets employ semiautomatic fire using bipod support; when both squad automatic riflemen can engage the target, they alternate fire to ensure continuous target coverage with consequent decrease in enemy reaction opportunity and increase in firer opportunity to adjust aim and reload.
- h. grenadiers engage exposed point targets, particularly those defilade to flat trajectory fire, out to their maximum 350-meter range.
- i. grenadiers engage covered point targets employing flat trajectory fire out to 150 meters, the maximum range for such fire.
- j. grenadiers employ the smoke round on order to cover the approach to, and other movement against, effective enemy fire which cannot otherwise be neutralized.

He will : indoctrinate all members of the squad to realize that;

101

- a. the enemy will not knowingly present a column target (greater depth than width) to direct small arms fire, since such a target is vulnerable to enfilade frontal fire.
- b. a column target is normally engaged by surprise fire of the entire unit, on order or signal; such fire should be both accurate and in heavy volume to exploit surprise effect.

: ensure that his rifle squad is proficient in engaging a column target employing well-understood SOPs on order, for example:

102

- a. riflemen engage their part of the target, riflemen on the right of the squad firing line engaging leading third, center riflemen, center third; and riflemen on left of squad firing line, the rear third.
- b. both automatic riflemen initially engage center of column, right fire team rifleman distributing fire over near half of target, left fire team rifleman engaging far half of target.

- c. both grenadiers fire initially on the center of the enemy column, observing strike carefully to permit adjustment of fire as the column disperses, with the right fire team grenadier on the near half of target, the other grenadier on the far half of target.
- d. where a portion of the column target is located to favor escape (such as the rear of column), as an alternative SOP, a designated portion or the entire squad may engage the less vulnerable portion initially, subsequently distributing fire over the more vulnerable portion as it disperses.

He must : indoctrinate all members of the squad to realize that they must be prepared to engage moving ground targets of varied types in combat, both personnel and vehicular, to include:

103

- a. personnel targets moving directly toward or away from the firer and on varying crossing courses present the alternative aiming problems of leads or pattern-of-fire techniques.
- b. personnel targets within small arms direct fire range will normally be moving in short two- to three-second rushes, dropping to cover, and can best be engaged as they raise for a rush or while stationary; personnel targets running at top speed in a continuous dash are an exception, and such targets can be engaged by either lead or pattern-of-fire techniques. A lead of one body depth is generally sufficient.
- c. personnel targets which are moving directly toward or away from the firer can be engaged by stationary fire technique provided the firer's aim is maintained during target movement.
- d. unarmored moving vehicles can best be engaged, on order or under SOP, using a pattern-of-fire technique, the firer selecting vulnerable points on the vehicle as the aiming point, such as the fuel tank or the engine or driver, then establishing his aim on a point ahead of the vehicle's course and firing sufficiently before the vehicle reaches the aiming point to provide time for bullet travel.
- e. armored moving vehicles are generally unprofitable targets for rifle fire except at very close range where accurate fire against vehicle openings may achieve personnel hits.

- He will** : ensure that all members of the squad are qualified in engaging moving ground targets to the extent time and facilities permit, to include the use of improvised ranges and dry firing where necessary, employing the proper techniques of engagement. 104
- He must** : develop squad SOPs governing the engagement of moving ground targets of various types, emphasizing those situations where individuals or squads may initiate fire under "fire-at-will" conditions. 105
- : during combat, direct the engagement of profitable moving targets by designated members of the squad, including the adjustment and control of such fires, and especially the prompt cessation of fire against unprofitable targets. 106
- He will** : during a fire fight, supervise and monitor the fire of his squad, observing and correcting: 107
- a. IFTLs' failure to properly control the action and fires of their fire teams.
 - b. the general tendency to fire high.
 - c. any unjustified use of automatic fire.
 - d. unduly long bursts of fire by automatic riflemen.
 - e. improper employment of grenade launcher fire considering availability of ammunition.
 - f. improper use of cover, to include failure to fire.
 - g. timely provision for redistribution and resupply of ammunition as the fire fight progresses.
 - h. failure to keep platoon informed of developments and recommendations for assistance.
- : during a fire fight, supervise and monitor the proper care of casualties, to include: 108
- a. their movement to nearby cover by not more than one or two men.
 - b. proper attention from aid men.
 - c. recovery and use of casualties' weapons and ammunition.

- d. prevention of undue grouping around casualties, particularly those caused by mines or boobytraps.

6. THE IRSL WILL ENSURE THAT HE AND HIS MEN ARE PROFICIENT IN THE TECHNIQUES OF LIMITED VISIBILITY FIRE.

- He must : know that limited visibility reduces the potential of direct fire to short ranges, necessitating changed techniques of surveillance and fire control, coupled with the increased importance of prearranged indirect fires. 109
- : know that sound cues are of increased importance under limited visibility surveillance conditions, because they normally afford an initial warning of enemy approach which can be used to localize the approximate source of the sound and thus aid in subsequent visual detection. 110
- : know that limited visibility conditions can exist during daylight hours because of fog, heavy rain, or through enemy employment of screening smoke; conversely, daylight visibility may be created at night through use of illuminants or other night-vision aids to visibility. 111
- : know that smoke-created limited visibility seriously reduces the potential of artificial illuminants, infrared, and other night-vision aids. 112
- : know that limited visibility can often reduce the individual's visibility to his immediate vicinity, denying leaders observation of their men, the enemy, and the terrain to the extent that control of fire can be exercised only through prearranged fires and SOPs. 113
- : know that every defense plan must include adequate provision for limited visibility defense as well as for full visibility defense; and that under certain conditions, such as habitual enemy night attack, coupled with limited time before darkness, limited visibility defense preparations will have priority. 114
- : know that the range at which targets can be detected in limited visibility is normally too short to permit the employment of fire orders or even the alerting of others, a situation which therefore necessitates increased reliance upon preplanned delegation of authority to "fire at will" at visible human targets inside a prescribed line. 115

: know that limited visibility conditions necessitate the employment of these special surveillance procedures designed to exploit available visibility:

116

- a. riflemen and team leaders visually search that portion of their squad sector which corresponds to their position in the squad out to the limit of visibility in both range and direction.
- b. automatic riflemen and grenadiers remain responsible for engaging automatic weapons within their squad sector or those delivering effective fire upon their squad, so they are normally not assigned individual surveillance sectors; however, in the absence of visual cues, such as hostile fire, they have a limited arc of visibility similar to the rifleman providing some additional surveillance.
- c. the squad leader, from a position which facilitates control and communication with the platoon headquarters:
 - (1) observes as much of the squad sector as visibility permits.
 - (2) maintains contact with platoon headquarters.
 - (3) periodically visits or checks the squad's positions, especially those manned by inexperienced or weak personnel, and any important or dangerous posts.
- d. maintenance of continuous observation during periods when a part of the squad is resting necessitates that those on duty automatically assume the surveillance responsibilities of the men they relieve in addition to their own. When two- or three-man foxholes are used, complete observation of the squad sector still exists; however, when single foxholes are used, gaps may be created which must be covered by other means.
- e. where single foxholes are used, or where more than half the squad is resting, visual surveillance of the entire squad sector may be impracticable, necessitating increased dependence upon sound cues, obstacles, artificial illuminants, and other surveillance aids.

: know that where, under limited visibility conditions, continuous and complete visual surveillance is essential, the dispersion between individual and squad positions may have to be reduced to achieve complete security of the squad sector. 117

: know that when open areas exist between the surveillance sectors of individuals or squads, provision must be made to cover such open areas by any or all of the following methods: 118

- a. use of wire or other obstacles, antipersonnel mines, trip wires, or improvised noisemakers such as suspended tin cans containing drainage holes and a few small stones.
- b. periodic surveillance aided by flares or other night-vision aids.
- c. prearranged flanking, grazing small arms fire which can sweep the open areas on order or sound cue.
- d. assignment of supplementary surveillance sectors covering additional dangerous areas, such as exposed flanks or the rear of a position, surveillance to be rotated between primary and supplementary sectors in accordance with the situation.

: know that surveillance under limited visibility conditions is stressful, particularly when complicated by the inexperience of personnel or physical exhaustion, necessitating short duty periods and intensive command supervision. 119

: know that the percentage of a squad kept on the alert should be the minimum required by the immediate situation, with due consideration given to the condition of the men and the requirements of the next day's operations, and should, in general, conform to these practices: 120

- a. fifty percent alert, in the absence of specific reasons otherwise, particularly when occupying two-man or paired foxholes.
- b. one-third alert when occupying three-man foxholes, or when the men are physically exhausted and/or the forthcoming day's operations are likely to be unusually demanding.

- c. full-strength alert when danger of attack is immediate and during relatively short periods favoring enemy attack, such as at dawn (stand to) or dusk (stand down).

: know that dependable and rapid communication between individuals and units is important under limited visibility conditions, especially during alerts or other emergencies, and should include:

121

- a. pull cords tied to wrist or leg of resting individuals.
- b. alert signals, pyrotechnic and sound.
- c. communication wire, where available, between squads and platoons and to listening posts.
- d. periodic visits by leaders to ensure readiness.

: know that individuals, particularly when inexperienced, are prone to fire indiscriminately and that an enemy can capitalize on this tendency to probe the defensive position; thus, necessary precautions include:

122

- a. prohibition of automatic weapon or rifle fire except on order or against close assault when human targets are visible.
- b. use of hand grenades or 40mm grenade fire against suspected targets within range.
- c. reporting, but not engaging except on order, targets beyond authorized "fire-at-will" line.
- d. pairing inexperienced men with experienced men to improve confidence and learning.
- e. practice for all men in distinguishing natural and animal-made sounds from the sounds of stealthy human approach.

: ensure that fire control under limited visibility conditions is based upon well-understood restrictions in opening, distributing, and ceasing fire, the tactical situation, and the visibility existing at the time.

123

: ensure that these prearranged limitations on opening fire are understood and practiced by all members of the squad:

124

a. direct fire without command (at will) can be initiated by any man under these conditions:

(1) riflemen and team leaders fire only at observed enemy personnel perceived clearly enough to permit proper weapon alignment for the range in question; fire at noises or weapon flashes, except on order, is prohibited.

(2) automatic riflemen and grenadiers fire only at enemy automatic weapons within range, or observed personnel.

b. preplanned fires are delivered only on order.

: ensure that these prearranged limitations on distribution and control of fire are understood and practiced by all members of the squad:

125

a. with visibility limitations coupled with the line formation habitually employed in an enemy assault, fire distribution is automatically achieved when each individual fires at visible targets within his surveillance sector or, when ordered, fires at preplanned targets within his sector employing indirect fire.

b. automatic riflemen and grenadiers employ direct fire, on order, against targets within range beyond the designated "fire-at-will" line, such as the aiming point afforded by the muzzle flash of automatic weapons fire.

c. when fire has been opened and no targets are visible within an individual's sector of fire, visible targets in adjacent sectors are engaged, provided the individual's primary sector of fire is rechecked for possible targets after every two or three rounds fired.

d. squad members employing direct fire against visible targets cease fire without command once appropriate targets are no longer visible; squad members employing preplanned fires cease fire on command or when an allocated amount of ammunition has been expended, and also when targets become sufficiently visible to permit direct fire.

: ensure that automatic riflemen are prepared to engage effectively their primary target (enemy automatic weapons delivering effective fire upon their squad), or lacking such targets, upon visible personnel within the squad sector, utilizing these aids (see FM 23-12):

126

- a. improvised luminous sights constructed with luminous tape, paint, or large metal sights.
- b. weapon bipod to facilitate sight alignment upon muzzle flash targets of opportunity.
- c. preplanned expedients to achieve grazing fire, with barrel elevation covering likely enemy avenues of approach or sectors of grazing fire.
- d. short three- to five-round bursts.
- e. range cards containing fire data necessary to engage likely targets, such as avenues of approach, possible enemy automatic weapons positions, and probable enemy assault positions, and to cover protective obstacles.

: ensure that grenadiers are prepared to engage effectively both enemy automatic weapons (their primary target) and visible assaulting enemy by employing these techniques:

127

- a. direct laying against muzzle flash targets where the visibility permits range determination and adjustment of fire.
- b. preplanned fires when direct laying is impracticable against muzzle flashes or other targets within range.
- c. direct laying employing the pointing technique against visible assaulting enemy within direct fire range beyond arming distance of the HE round, and within 31-meter arming distance of the HE round by using the canister round.
- d. employing fragmentation hand grenades against targets within arming distance of the HE round when canister rounds are not available.

- He will** : know that the direct laying engagement of appropriate targets has priority at all times, but that during limited visibility vital and renumeration targets will exist which can only be engaged by rifle, automatic rifle, and grenade launcher fires employing preplanned fires prelaidd by field expedient methods. 128
- : know that preplanned fires for rifles, automatic rifles, and grenade launchers must be prepared during daylight, and when tactical conditions permit, registered by fire. 129
- : know that the flat trajectory of rifle and automatic rifle fire is best utilized in preplanned fire when sited to achieve grazing fire at the height of a crawling man, covering the front of a defensive position or enfilading a likely enemy avenue of approach. 130
- : know that the greater efficiency of the automatic rifle over the rifle in the delivery of prearranged fires makes advisable its assignment to the more important tasks, such as covering the front of the defensive position with grazing fire, and where possible enfilading the protective wire. 131
- : know that frontal grazing fire is also effective and can be used wherever the ground is level or uniformly sloping, permitting the siting of: 132
- a. rifles or automatic rifles to achieve fixed grazing fire against limited visibility targets, such as likely enemy approaches or possible automatic weapon positions.
 - b. rifles or automatic rifles with a prelaidd barrel elevation to achieve a sector of graze, thus reducing the task of firing to the directional alignment of the weapon upon a located or suspected target.
- He must** : ensure that all men use field expedient methods, such as notched stakes, tree crotches, logs, or boards, to emplace rifles or automatic rifles for the delivery of preplanned grazing fires during limited visibility, to include: 133

- a. all preparation for limited visibility firing is completed during good visibility to include, whenever possible, registering the fire to ensure the desired graze.
- b. men armed with the rifle or automatic rifle carefully survey their sectors of fire, select and mark the sector of graze limits with stakes or suitable substitutes to limit lateral barrel movement to the graze sector, noting to what range the grazing fire is limited.
- c. the sector of graze fire is scanned to determine whether any targets exist having sufficient tactical importance to warrant fixed grazing fire, for example, possible enemy approaches or likely automatic weapon positions.
- d. material at the firer's position is collected to be used in emplacing the weapon; where fire anywhere within the graze sector appears equally important, a log or board is preferable for the forward weapon support, with a notched stake for the rearward support; where fixed fire is planned, notched stakes are preferable for both forward and rear weapon supports, using a separate forward support for each fixed target.
- e. with the firer in position, the ground location of the forward weapon support is marked at the weapon balance, then the log or other support is firmly emplaced at the selected position to cover the sector and conform to any side slope existing; the support is pinned firmly in place using short stakes or sticks.
- f. the critical factor of graze fire barrel elevation is next established; men work in pairs during this procedure, alternating in helping the firer establish the rear weapon support so that it supports the rear of the butt, and when the weapon is on its supports and firmly against the firer's shoulder in his firing position, it is laid at the desired barrel elevation.

- g. by trial and error, the elevation of the rear support is adjusted until the final laying is accurately attained with the firer laid upon a ground level aiming point, such as the base of a bush or rock located at the point where the graze potential terminates, employing either a battle-sight setting, or the range to hit the aiming point if at a range greater than 250 meters.
- h. where fire anywhere within the sector of graze is desired, the laying should be checked at a series of points within the sector, particularly if it is on a side slope.
- i. the weapon is left in the final position ready to deliver preplanned fire on order once the firer is in position with shoulder supporting the weapon butt.
- j. the weapon can be readily lifted from its support for direct fire if and when the necessity exists (though the relative desirability of hand grenade versus weapon fire should be considered if the range is short).

He will : ensure that all men use field expedient methods of employing improvised equipment, such as stakes or stout sticks, to emplace grenade launchers for the delivery of preplanned fires during limited visibility, with the launcher in a ground position rather than in shoulder fire:

134

- a. at the selected launcher position, a small amount of earth is scooped out to form a slight depression for the toe of the launcher butt, and a good solid stake is driven into the ground at this point until its top is flush with the bottom of the depression so that it will take the weapon's recoil and prevent it from digging further into the ground.
- b. with the launcher in position, toe of butt on stake and laid on target for direction, two deflection stakes are driven firmly into the ground so as to contact the launcher barrel and prevent lateral movement, thus ensuring maintenance of direction lay on target.
- c. two elevation stakes are driven to contact the launcher barrel at different points when the elevation is laid to hit the target and establish proper elevation.

- d. where engagement of more than one target is planned, separate deflection and elevation stakes are used for each target; the same recoil stake position can be used unless the situation makes use of a different position desirable.
- e. each target planned should be identified by letter, and a range card prepared to facilitate fire delivery on order.
- f. wherever the situation permits, fire should be registered to increase accuracy.

7. THE IRSI WILL ENSURE THAT HE AND HIS MEN ARE PROFICIENT IN THE IDENTIFICATION AND ENGAGEMENT OF LOW-FLYING HOSTILE AIRCRAFT, BOTH FIXED AND ROTARY WING.

He must : know that the rifle squad is responsible for its immediate protection against low-flying hostile aircraft without reliance upon special antiaircraft weapons. 135

: ensure that all members of the squad utilize all passive protection measures against aerial attack to include personal camouflage; quiet, covered movement; and rapid adoption of the best available immobile position on the approach of unknown aircraft. 136

: ensure that all members of the squad are qualified in the rapid identification of all types of friendly and hostile aircraft that they are likely to encounter. 137

: ensure that the squad initiates fire against fixed or rotary wing aircraft only when the aircraft is positively identified as hostile, the aircraft commits a hostile act, or air defense measures designed to prevent disclosure of friendly positions are not in existence; fire will be withheld on order even when the aircraft is identified as hostile or commits a hostile act. 138

He will : ensure that his men are trained to employ, and order and supervise the combat employment of, the appropriate technique of aerial target engagement by his squad. 139

- : know that riflemen and automatic riflemen normally employ, under squad control, the target-leading technique from either the standing or kneeling positions, distributing fire along the flight path of the aircraft and firing their weapons at their maximum effective rate of fire. 140
- : know that the target-leading technique necessitates aiming an appropriate distance ahead of the aircraft on its projected flight path so that aircraft and bullets meet; the aiming distance ahead of the aircraft is termed "lead" and varies with the aircraft's speed, range to the aircraft, and the aircraft's direction of movement with respect to the line of sight. 141
- : know that direct aim at the aircraft may be used (leads not required) when the target is at extremely close range, diving directly at the firers, or flying directly away from the firers. 142
- : know that leads are applied using the length of the aircraft, as it appears to the firer, as the unit of measure, for example, "two target lengths." 143
- : know that combat experience indicates a general tendency to take too little lead, and that training must overcome this tendency. 144
- : know that too much lead is preferable to inadequate lead. 145
- : ensure that his riflemen and automatic riflemen memorize and employ these commonly encountered target lead conditions. 146

Gunner-to-Target Range in Meters		Aircraft Speeds and Leads		
		Leads at 100 Knots	Leads at 200 Knots	Leads at 300 Knots
Below	220	1.0	2.5	3.0
	220	1.0	2.5	3.5
	250	1.5	3.0	3.5
	300	2.0	3.5	4.5

- : know that the use of leads against an aircraft involves tracking, which consists of initially taking direct aim at the aircraft, then moving the aim forward of the aircraft by the required lead and maintaining this lead while firing at the aircraft. 147
- : know that tracking the aircraft before it comes in range is helpful in establishing smooth tracking and can also be used in determining the "fixed point" in the pattern-of-fire technique. 148
- : know that the pointing technique, not the weapon sights, is used in firing at aircraft, the firer sighting the target over the front and rear sights and preferably using tracer ammunition to facilitate adjustment of fire. 149
- : know that the use of tracers to adjust fire requires practice to overcome the following illusions: 150
 - a. the "apparent tracer stream" where the tracers are collectively perceived as a continuous stream due to the changing azimuths of fire when using the target-leading technique.
 - b. the "tracer hump" caused by viewing the tracer rounds at the same time as the target (moving perpendicular to the tracers) is being viewed as a sighting reference.
- : know that tracer round observation is the only technique of fire usable when weapons employed cannot fire the pointing technique. 151
- : know that while a maximum rate of fire is desirable in antiaircraft fire, the rate should not exceed that essential to proper aim and trigger control, otherwise such fire is ineffective; riflemen normally employ semi-automatic fire and automatic riflemen short, closely spaced bursts of two to three rounds, although in pattern-of-fire engagement more rapid rates are usable. 152
- : know that the pattern-of-fire technique (used generally against jets) is an alternate to the target-leading technique (used generally against propeller-driven aircraft and helicopters) where the rifle squad fires at a fixed point in the target's path well ahead of the target (an estimated 10 leads) to provide for varying ranges and aircraft speeds, and maintains fire at a rapid rate until the target flies into the cone of fire. 153

- : know that the pattern-of-fire technique is seldom used by the rifle squad unless it fires as part of a larger unit, such as the platoon, where the density of the cone of fire increases the chance of hits.

154
- : know that in the defense, preplanned aiming points may be selected to facilitate rapid reaction and maximum concentration of fires. This may be accomplished in the same manner as selecting final protective fires for the individual soldier, i.e., prescribe an aerial line of fire for each weapon for each aiming point.

155
- : know that high-performance aircraft will often fly at low altitudes to escape radar detection, antiaircraft artillery and surface-to-air missiles.

156
- : know that when the squad is delivering antiaircraft fires as a separate unit against a high-performance aircraft, that the command to commence fire should be given at that time which will permit the aircraft to be over the aiming point when the magazines of automatic weapons are half-empty (when firing at maximum effective rate).

157
- : know that grenade launcher fire is normally ineffective against aircraft except in a pattern-of-fire engagement of aircraft at very short ranges; a far longer fixed lead is necessary because of the slow velocity of the grenade round.

158
- He must** : assist in the control and supervision of antiaircraft fire by his squad when such fire is opened upon platoon order.

159